



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,224	05/22/2006	Joseph Shapira	1369MMG-US	9845
David Klein Dekel Patent Beit HaRof'im Room 27 18 Menuha VeNaha Street Rehovot, ISRAEL	7590 05/27/2009		EXAMINER LEE, BENJAMIN P	
			ART UNIT 3641	PAPER NUMBER
			MAIL DATE 05/27/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,224	Applicant(s) SHAPIRA ET AL.	
	Examiner BENJAMIN P. LEE	Art Unit 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/22/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsadka et al. (U.S. Patent 6,247,259).

2. In regards to claim 1, Tsadka et al (henceforth referred to as Tsadka) disclose a fire control system (note that Tsadka teaches a "fire control system" as col. 2, line 46) comprising:

- a LIDAR (laser identification, detecting and ranging) unit comprising a laser adapted to transmit a beam to a target. Note that Tsadka teaches a ranging system that generates laser beams, receives the beams and determines the range and crosswind direction and velocity (col. 2, lines 63-67 and col. 3, lines 1-20);
- a collecting lens for receiving a beam returning from the target (col. 5, lines 49-52). Note that Tsadka teaches either two separate or a single lense for the two "dectectors";
- and receiver optics comprising a multi-element detector array at a focal plane of the collecting lens (col. 5, lines 49-52 and col. 6, lines 1-3). Note that

Art Unit: 3641

Tsadka teaches two detectors that receive laser beams at the focal plane of the lenses;

- wherein for each element of the multi-element detector array there is a specific optical path in the atmosphere leading from the laser to the target and back from the target to the element. Note that Tsadka teaches two separate detectors in the same plane and where there is an individual path (specific optical path) between the detector and target for each detector (see Tsadka figure 1 following);
- and processor (item 36 of Tsadka figure 2 following) apparatus operative to measure signal fluctuations of an element of the multi-element detector array, and compute therefrom crosswind velocity of wind in the atmosphere (col. 5, lines 14-29 and col. 6, lines 25-59).

3. In regards to claim 2, Tsadka discloses that the processor apparatus is operative to compare signal fluctuations patterns of two or more elements of the multi-element detector array, compute a cross-correlation function, and use said cross-correlation function to define a wind direction of wind in the atmosphere (col. 6, lines 59-67 and col. 7, lines 1-27). Note that Tsadka teaches that the output of each detector is processed and compared via the CCF (Cross-Correlation Function).

4. In regards to claim 3, Tsadka discloses that the processor apparatus is operative to compare signal fluctuations patterns of two or more elements of the multi-element

Art Unit: 3641

detector array, compute variances of image centroid displacements, and use said variances to determine a turbulence strength value of wind in the atmosphere. Note that Tsadka teaches that the reflected laser beam is received in two separate locations and the corresponding signal fluctuations (intensity fluctuations) to determine the crosswind direction and velocity and then either providing information or automatically adjusting the weapon sight to compensate for the crosswind (col. 3, lines 8-20). Further note that the processor of Tsadka computes the vertical and horizontal displacements of the weapon sight relative to the target and automatically move the weapon's sight image aiming point to compensate for the crosswind. Note that the image visible in the weapon sight inherently has a centroid and Tsadka teaches automatically moving the aiming point to a separate location consistent with a displaced "image" centroid.

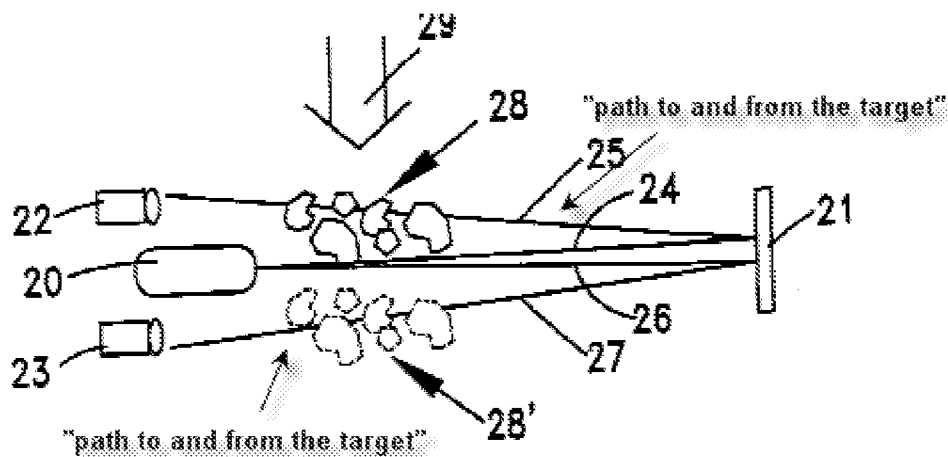


Fig. 1

Tsadka

Allowable Subject Matter

5. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 4, the closest prior art fails to teach, in combination with all the limitations of claim 4 and the base claim, a processor operable to calculate turbulence strength changes and wind fluctuations insensitivity in combination with choosing fluctuations that act as refractive lenses with focal lengths on the order of hundreds of meters or more.

Prior Art

Tsadka et al.	06/19/2001	6,247,259 B1
---------------	------------	--------------

Summary/Conclusion

6. Claims 1-3 are rejected and claims 4-6 are objected to.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin P. Lee whose telephone number is 571-272-8968. The examiner can normally be reached between the hours of 8:30am and 5:00pm on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number

Art Unit: 3641

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Benjamin P. Lee/

Examiner, Art Unit 3641